

Work Order ID 81096

81096

Page 1

March-08-12 8:46:17 AM

Item ID: D3391-021 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Tube Assembly
 Start Date: 08/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12/03/09 Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr.	Revision Nbr								
D3391	I								
100		0.00							
100	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	Cut extrusion to 46.52 +0.010 -0.020								
110		0.00							
110	BENDING MACHINE - SKIDTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend as per Dwg D3391 Using Bend Prog 3391021								
120		0.00							
120	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									

① SAD 12-03-19

① SAD 12-03-19

6.8"

DD 12-3-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Item ID: D3391-021

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Fwd Tube Assembly

Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

0.00

130

HAAS CNC VERTICAL MACHINING #1

HAAS I

Memo

0.00

HAAS CNC vertical machine #1

1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. 1
Identify as D3391-1
2-DeburrSL 12-03-23 ①

140

0.00

140

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

SL 12/03/23

150

0.00

150

CONVENTIONAL MILLING MACHINE

Mill Conv

Memo

0.00

Conventional Milling Machine

Drill X1 Aft cap as per Dwg D3391 .1875" dia

.1SL 12/03/23

W/O:		WORK ORDER CHANGES					
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Quality Control

an 12/03/28

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Item ID: D3391-021

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Fwd.Tube Assembly

Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

0.00

180

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

2-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Debur & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

NO WEARPLATE HOLES ARE TRANSFER DRILLED

DL 12/04/03

190

QC5- Inspect part completeness to step on W/O

0.00

190

QC

Memo

0.00

Quality Control

S. Zlotol

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 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Chemical Conversion Coat per QSI005 4.1	0.00							
200									
HandFinish	Memo	0.00							
Hand Finishing									
210	QC7-Inspect Chemical Conversion Coat	0.00							
210									
QC	Memo	0.00							
Quality Control									
220		0.00							
220									
Skidtubes	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: <u>128 666</u> exp. date: <u>13-1-30</u> cure time 12hrs. as per QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary								

W/G 12-4-4

SAD 12-04-11

DC 12/04/11

W/O:		WORK ORDER CHANGES					
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Revision ID:

Item Name: Fwd Tube Assembly

Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230 QC5- Inspect part completeness to step on W/O 0.00

230

QC

Memo

0.00

8/12/13

Quality Control

235 Pressure Wash per QSI005 4.3 0.00

235


HandFinish

Memo

0.00

Hand Finishing

AND REALODINE AS PER PAR09-043

1X  m-f 12/04/13

240 White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum 0.00

240

Powdercoat

Memo

0.00

Powder Coating

START TIME: 8:50
OVEN TEMPERATURE: 220°F
FINISH TIME: 9:20

1X  m-f 12/04/14

m/20222

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

*** 1 ***

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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250 QC3- Inspect Part Finish

0.00

250

QC

Memo

0.00

Quality Control

255

0.00

255

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

**** install D3591-1 spacer as per DSI9364 and wearplate as per DWG ****

257

QC5- Inspect part completeness to step on W/O

0.00

257

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: <u>w/o</u>	0.00							
260									
Packaging	Memo	0.00				1x	0		yl 12/04/11
Packaging									
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

12/4/19 *[Signature]*
112-04-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Work Order ID: 81096

81096

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM
 IPP B06.02.10Dwg rev.D ecn 773 EC
 IPP C06.05.02Added inspections EC
 IPP D 07.03.13 rev F dwg EC
 IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD
 IPP Rev:f ECN 1056 07-11-12 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev I 09.02.02 added hardware EC verified by: DD IPP Rev:J
 11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4095-051		Manufactured	No			255	Each	21.0000	1	1			
										**	JL 12/04/16		

D4095-051

Wearpad Assembly

Location	Loc Qty	Loc Code
FP001	11	
78821	11	
FP002	10	
78914	10	

D6013-047

Manufactured No

100 Each 110.0000 1

D6013-047

Skidtube Material

**

SAD 12-03-19

Location	Loc Qty	Loc Code
LG	110	
72505	110	

①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Work Order ID: 81096

81096

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

220

Each

63.0000

4

4

D3670-4-200

SPACER

**

OK 12/04/11

Location

Loc Qty

Loc Code

LG001

63

72851

3

77500

4

78606

56

D3401-041

Manufactured No

255

Each

14.0000

1

1

D3401-041

Tow Cap Assembly

**

21 12/04/11

Location

Loc Qty

Loc Code

FP002

14

78990

11

80611

3

AN960C10L

NAS1149C0332

Purchased

No

255

Each

0.0000

10

10

*AN960C10I *

washer

**

X1121255 (x10) 21 12/04/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

255

Each

3,729.000

10

10

AN3C4A

BOLT

**

yl

12/04/17

Location

Loc Qty

Loc Code

ST350

3729

117688

5

118112

16

119749

10

120187

2000

120423

10

120521

510

120769

515

120799

163

120930

500

x10

D3672-1

Manufactured

No

255

Each

1,294.000

4

4

D3672-1

Phenolic Washer

**

yl

12/04/17

Location

Loc Qty

Loc Code

FP001

242

66821

242

ST060

1052

72229

52

76277

500

80369

500

x4

AELS-1032-225

Purchased

No

255

Each

0.0000

10

10

AFI S-1032-225

INSERT

✓ AELS-1032-222

**

(x10)

yl

12/04/16

M121269

March-08-12 8:46:21 AM

Shop Packet Print

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W/O:		WORK ORDER CHANGES					
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FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	
E	09.12.14	Dwg Rev updated	KJ	
F	11.06.21	Dimension 0.500 added	KJ	

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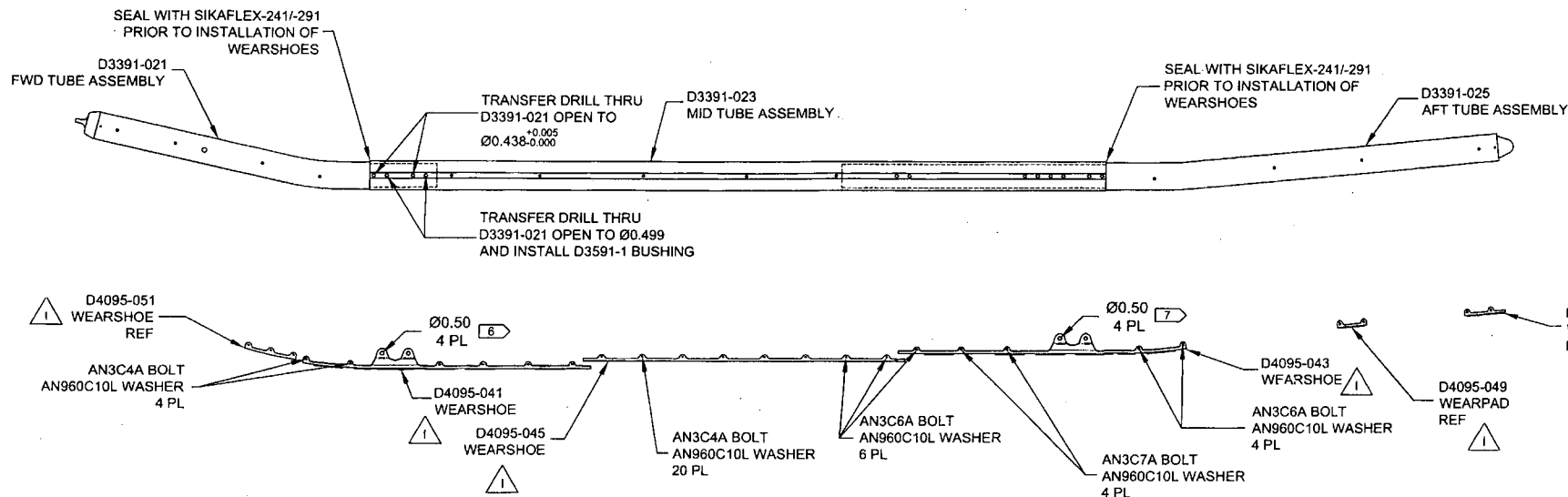
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D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
- 3) AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 7) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 8) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

81096

RELEASED
2011-11-04

DESIGN	PH	DART AEROSPACE USA, INC			
DRAWN	XDF	KENT, WA			
CHECKED		DRAWING NO.	REV.		
MFG. APPR.		D3391	SHEET 2 OF 8		
APPROVED		TITLE	SCALE		
DE APPR.		412 FLOAT SKIDTUBE	NTS		
DATE	11.10.13	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC			
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.					

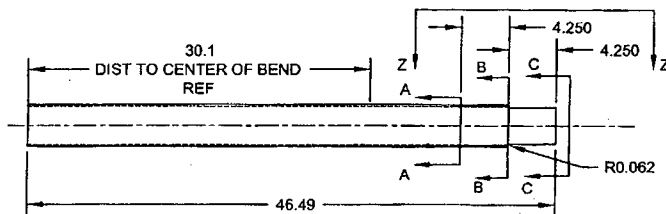
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

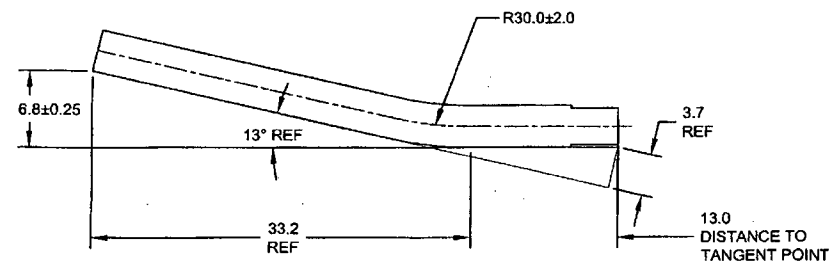
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

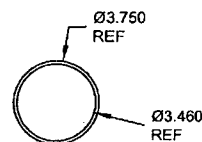
NOTE: Date & initial all entries



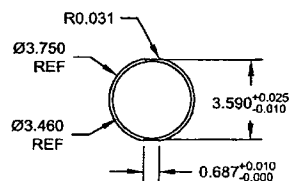
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



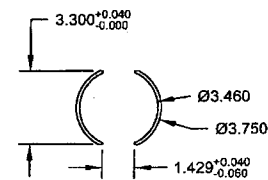
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



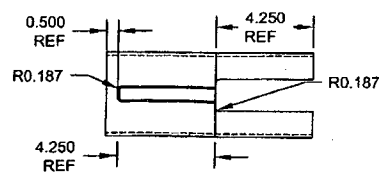
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

81096

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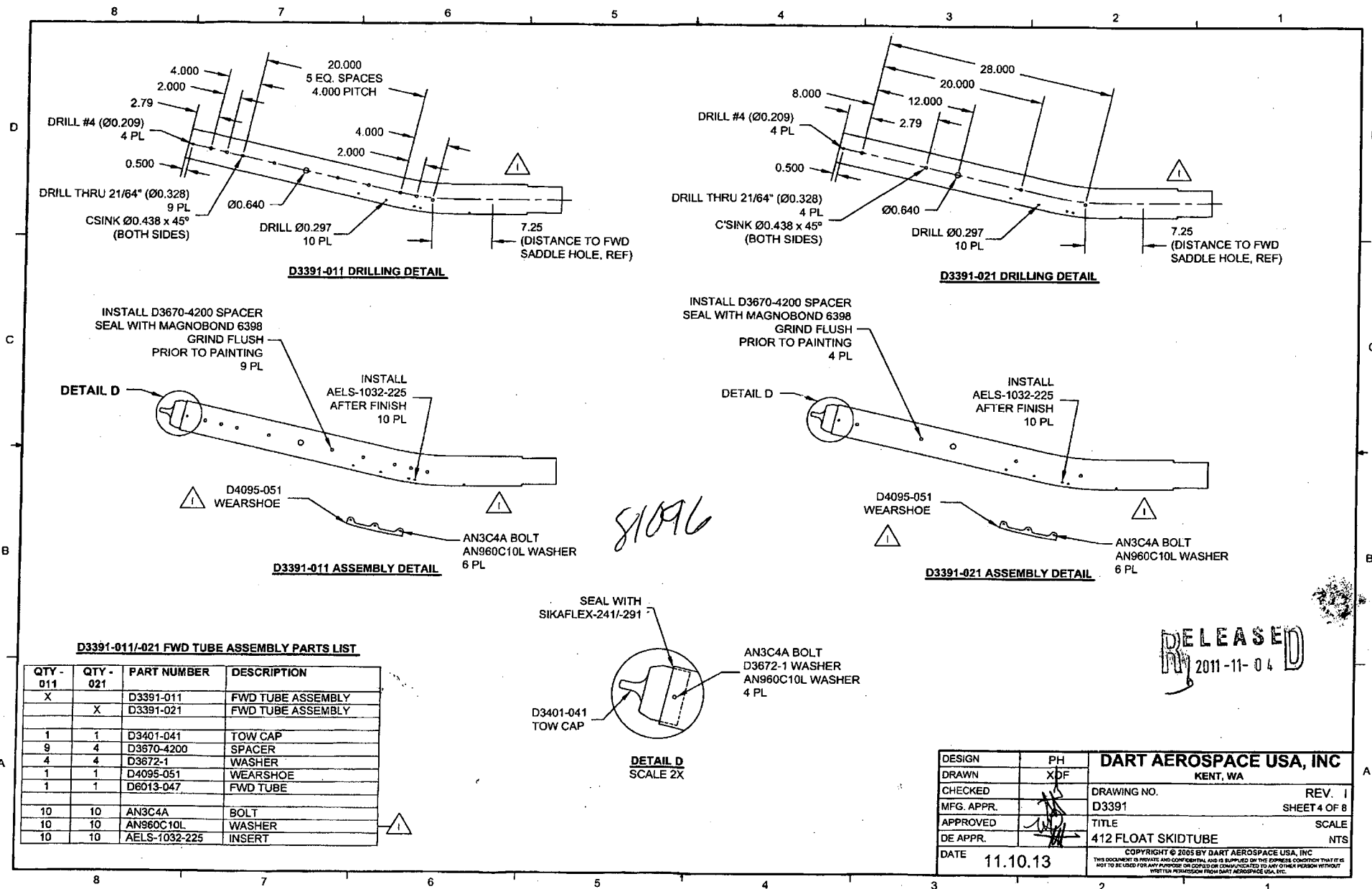
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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8 7 6 5 4 3 2 1

D

D

C

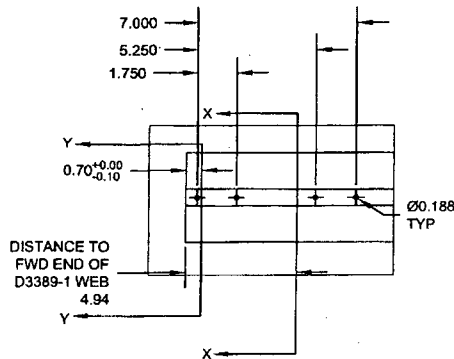
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B

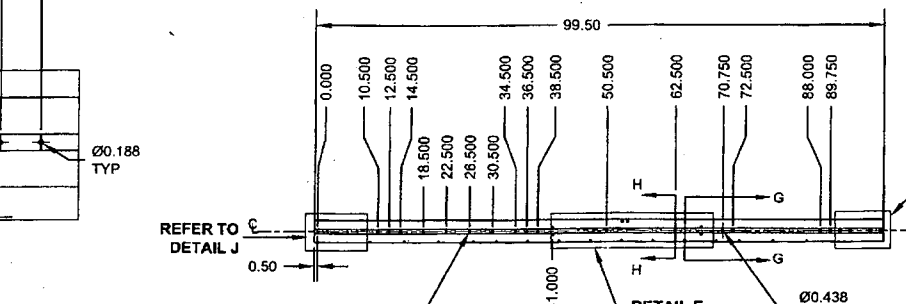
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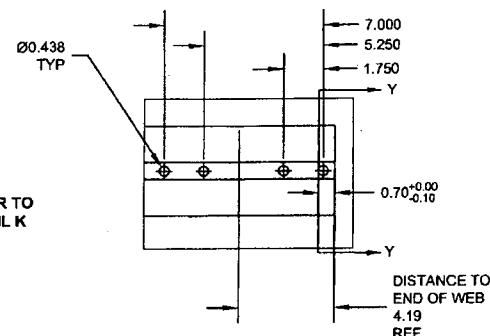
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DETAIL J
SCALE 4X



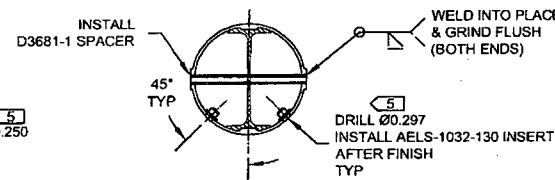
D3391-013 ASSEMBLY DETAIL



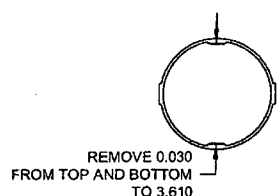
DETAIL K
SCALE 4X



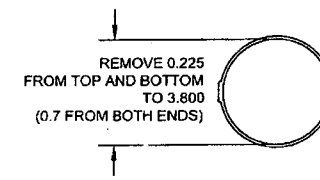
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



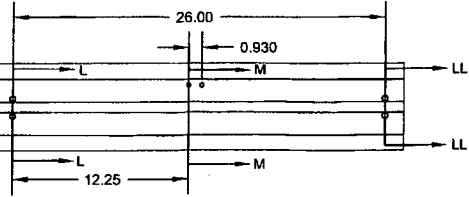
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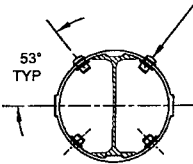
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

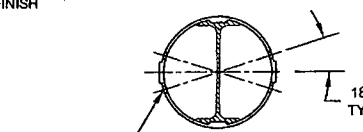
QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



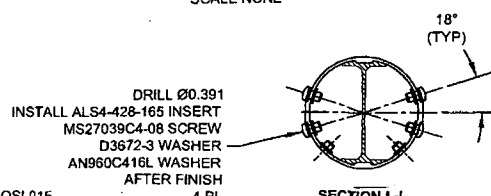
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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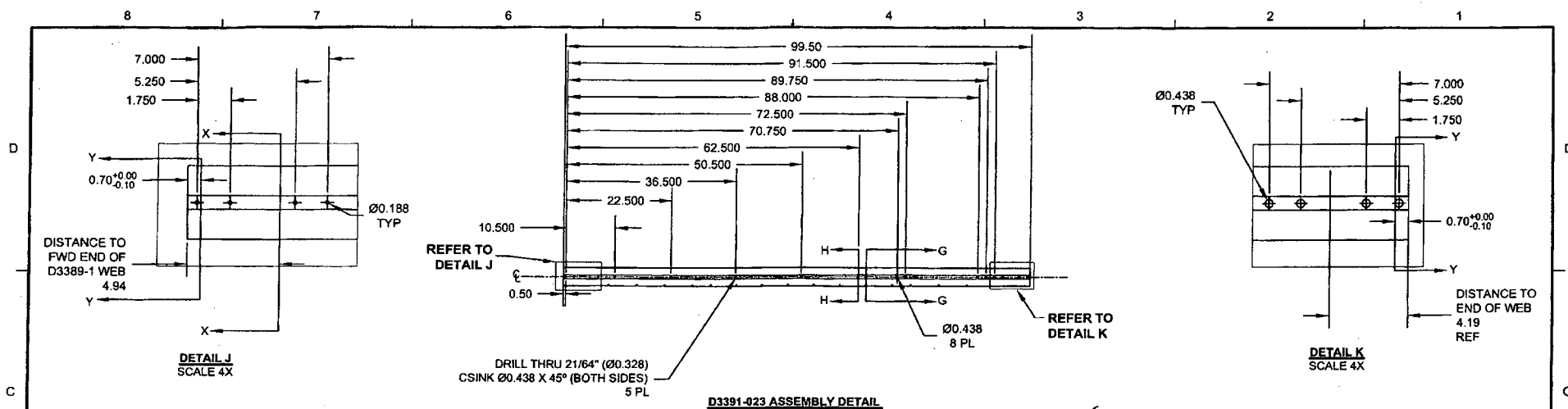
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

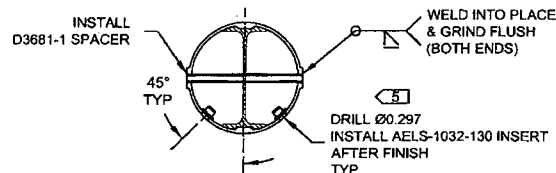
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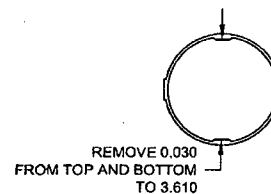
81096



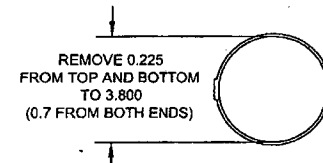
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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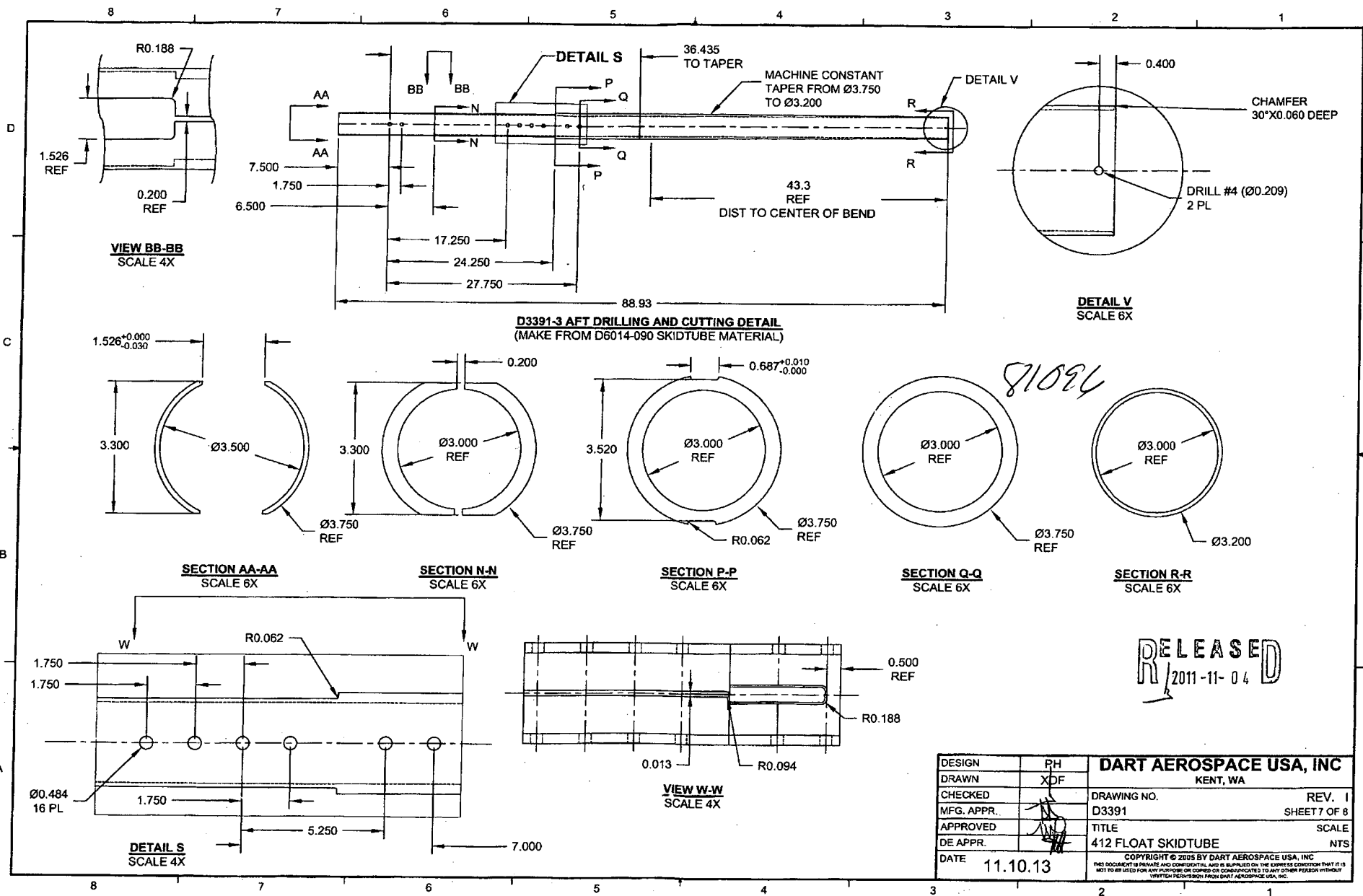
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